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October 14, 2010

Mr. Sam Unger
Executive Officer
Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, CA 90013

Attn: Jenny Neumann

Submittal of the Los Angeles River Metals TMDL, Reach 3
City of La Cañada Flintridge

Dear Mr. Unger:

The City of La Cañada Flintridge is herewith submitting the Final Implementation Plan for the Reach 3 portion of the City for the Los Angeles River Metals TMDL as required by the TMDL. The City is submitting the attached document by itself because of decisions made by the other jurisdictions within Reach 3, specifically the City of Los Angeles, the County of Los Angeles and the Cities of Burbank and Glendale who have received approval from the Regional Board to submit stand alone documents.

The City of La Cañada Flintridge believes that the plan is accurate and complete and provides a practical plan for the City to support the efforts of other Cities in the Los Angeles River Watershed to reduce and eliminate the metals problem by the 2028 target. If you have any questions regarding the attached plan please contact myself at 818-790-8882 or Mr. Elroy Kiepke at 562-908-6278.

Sincerely,

Edward Hitti, P.E.
Director of Public Works

c: Elroy Kiepke, P.E., Willdan

Los Angeles River Metals TMDL Implementation Plan for City of La Canada Flintridge – Reach 3

January 11, 2010
Revised October 11, 2010

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Implementation Plan

Table of Contents

| | |
|---------------------------|--------|
| Introduction | Page 1 |
| Regulatory Requirements | Page 1 |
| Watershed Description | Page 2 |
| Rainfall Characteristics | Page 3 |
| Flow Characteristics | Page 3 |
| Surface Water Quality | Page 4 |
| Best Management Practices | Page 6 |
| Non-structural BMPs | Page 6 |
| Structural BMPs | Page 7 |
| Implementation Plan | Page 8 |
| Schedule | Page 9 |

Introduction

This Total Maximum Daily Loads (TMDL) Implementation Plan is being submitted by the City of La Canada Flintridge for its own portion of the Los Angeles River Reach 3 watershed. This has been made necessary because of decisions made by the major jurisdictions within the Reach 3 watershed. The cities of Los Angeles, Glendale and Burbank along with the County of Los Angeles have submitted requests to the Regional Board, which have been approved, to be allowed to prepare their own implementation plans independent of other affected jurisdictions. As a result of these decisions by the Regional Board the City of La Canada Flintridge must submit its own implementation plan for the Reach 3 watershed.

The City of La Canada Flintridge made a request to the Regional Board that the Reach 3 portion of the City be allowed to implement the Joint Reach 2 implementation plan which is being prepared and submitted in cooperation with 28 cities within the Reach 2 watershed. This request was reviewed by the Regional Boards staff and was rejected.

The City of La Canada Flintridge is primarily a bedroom suburb of the Greater Los Angeles Urban Community. Residents of La Canada Flintridge commute to Downtown Los Angeles, JPL, Glendale, Burbank and other San Gabriel Valley Job centers for work leaving families to attend school and shop within the local community. This unique community has made great strides over the past decade and one-half to address its contribution of pollutants to the Los Angeles River Watershed. The City has installed sanitary sewer systems throughout the community north of Foothill Boulevard eliminating the waste load that was either infiltrated through the septic systems to the ground water or through the gray water discharges to the storm drain system.

The area of La Canada Flintridge that contributes to the Reach 3 watershed is approximately 1,848 acres, or less than one percent of the Reach 3 drainage area. Drainage from the Reach 3 portion of the City of La Canada Flintridge drains to the Verdugo Wash drainage system.

Regulatory and Permitting Requirements

The LAR Metals TMDL was first drafted by the LARWQCB in 2004. On June 2, 2005, the LARWQCB adopted the LAR Metals TMDL. Following State Board and State Office of Administrative Law approvals, EPA Region 9 approved the TMDL on December 22, 2005. The TMDL originally became effective January 11, 2006.

Local challenges to the TMDL provisions arose and were subsequently resolved. Following resolution of these challenges, the TMDL was approved by the

LARWQCB on September 6, 2007, by the State Board on June 17, 2008, by the Office of Administrative Law on October 14, 2008, and by EPA Region 9 on October 29, 2008. The TMDL became effective on October 29, 2008.

The TMDL requires that the MS4 permittees and Caltrans submit plans that are sufficient to address the following (LARWQCB 2005):

“Each municipality and Permittee will be required to meet the storm water wasteload allocations shared by the.... Permittees at the designated TMDL effectiveness monitoring points. A phased implementation approach, using a combination of non-structural and structural BMPs, may be used to achieve compliance with the wasteload allocations. The administrative record and the fact sheets... must provide reasonable assurance that the BMPs selected will be sufficient to implement the waste Load allocations.”

The following table lists the interim and final TMDL compliance target dates defined by the LARWQCB (LARWQCB 2005):

TMDL Compliance Target Dates

| MS4 Drainage Area ¹ | Compliance Target Dates | |
|--|-------------------------|------------------|
| | Dry Weather Flow | Wet Weather Flow |
| 25% | No Target | 2012 |
| 50% | 2012 | 2024 |
| 75% | 2020 | No Target |
| 100% | 2024 | 2028 |
| ¹ Percent of the MS4 drainage area that must be in compliance with the numeric limits of the TMDL by the compliance Target Date | | |

Watershed Description

Local, County, State and Federal resources, regulations and guidelines in conjunction with geographic information system (GIS) data maintained by the Southern California Council of Governments (SCAG) have been used to evaluate hydrologic and water quality characteristics in the Reach 3 watershed that will impact BMP siting.

The Reach 3 watershed consists of the drainage from the Burbank Western Channel, the Verdugo Wash and the eight miles of the Los Angeles River watershed drainage area, and is contained wholly within Los Angeles County. The watershed consists of a varied topography, including undeveloped areas of the San Gabriel and Verdugo Mountains, as well as large urban centers north and northeast of downtown Los Angeles.

Reach 3 of the LAR is approximately 8 miles, with its upstream end at the confluence with the Burbank Western Channel. This channel conveys approximately 9 mgd of effluent from the City of Burbank Water Reclamation Plant (WRP) as well as urban Stormwater runoff discharges to the river. Downstream of the Burbank Western Channel, the river confluences with the Verdugo Wash, and then parallels the Interstate 5 freeway. The westerly portions of the City of La Canada Flintridge is part of the drainage area of the Verdugo Wash, which primarily conveys Stormwater runoff from urban areas south of the 210 freeway and canyon runoff from the Verdugo Mountains to the LAR. Downstream of the Verdugo Wash confluence, the river bends southward into the Glendale narrows. The bottom of the LAR is unlined allowing natural springs to recharge runoff in the river. Effluent from the City of Los Angeles-Glendale WRP discharges into Reach 3 in the Glendale Narrows. This WRP has a capacity of 20 mgd.

Rainfall Characteristics

Historical rainfall records from three existing rain gauges located in or adjacent to the Reach 3 watershed were obtained and utilized in the report. The Meteorological stations and resulting rain gauge data are maintained by National Climate Data Center (NCDC). The San Gabriel Mountains create an orographic effect within the Foothills that increase rain fall by as much as 15% over the annual average rainfall monitored for the historical record.

Flow Characteristics

The Los Angeles County Department of Public Works maintains eight stream gauge stations in the LAR watershed, one within the Reach 3 watershed. Daily mean stream flows are available. Measured flows at this station were compared to assess the fraction of runoff in the LAR watershed that can be attributed to the Reach 3 watershed. The comparison revealed that such an estimate cannot be made using data from this station, as measured flow is not increased in order of magnitude with increasing drainage area.

TMDL targets are set based on the definition of dry and wet weather, which can be determined using the stream flow data. For the LAR and its tributaries, a dry weather day is defined as a day where the maximum daily flow at station F319-R (Wardlow Road) is less than 500 cubic feet per second. Therefore, it is critical to have a complete data set of flow rates at station F319-R. Preliminary review of station F319-R data did reveal some missing flow data due to unknown circumstances. To provide an approximation of the maximum daily flows for the missing days, flows from the nearest upstream station F34D-R were utilized. This provided the needed information to designate a wet or dry day, and proceed with evaluating water quality in the watershed.

Surface Water Quality

The Reach 3 Watershed currently has metal TMDL limits defined for eight constituents. Water quality sampling for the study area was evaluated for these constituents using data recorded by the City of Los Angeles Status and Trends from July 2000 through August 2008.

A summary of grab sample exceedances over the sampling period for dry weather is provided in the following table.

Summary of Metals Water Quality Exceedances for Dry Weather

| Reach | Site | Cad Des | Cad Total | Cop Dis | Cop Total | Lead Des | Lead Total | Sel Dis | Sel Total | Zinc Dis | Zinc Total |
|--------------|------------------|---------|-----------|----------|-----------|----------|------------|---------|-----------|----------|------------|
| LAR Reach 3 | LAR ups of LAG | NA | NA | 5/32(23) | 4/25(25) | 1/31(7) | 0/25(13) | NA | NA | NA | NA |
| LAR reach 3 | LAR dns of LAG | NA | NA | 1/32(22) | 1/24(24) | 2/31(9) | 0/24(11) | NA | NA | NA | NA |
| LAR reach 3 | LAR at Los Feliz | NA | NA | 5/26(16) | 1/25(25) | 2/25(7) | 0/25(11) | NA | NA | NA | NA |
| LAR Reach 3 | LAR at Colorado | NA | NA | 5/94(87) | 14/94(91) | 4/94(35) | 7/94(46) | NA | NA | NA | NA |
| LAR Reach 3 | LAR at Figueroa | NA | NA | 1/83(73) | 0/83(76) | 3/83(29) | 5/83(40) | NA | NA | NA | NA |
| Verdugo Wash | At Fairmont | 0/4(0) | 0/4(1) | 0/4(4) | 0/4(4) | 0/4(1) | 0/4(3) | NA | 0/4(3) | 0/4(4) | 0/4(4) |

The format is (number of exceedances)/Total number of samples, and the total number of non-zero detects at each location.

Summary of Wardlow Road Station Composite Wet Weather Exceedances in the LAR Watershed

| Constituent | Wet Weather TMDL Numeric Target | Number of Exceedances (Total Samples) |
|---------------|---------------------------------|---------------------------------------|
| Total Cadmium | 3 | 4(31) |
| Total Copper | 17 | 21(31) |
| Total Lead | 61 | 5(31) |
| Total Zinc | 159 | 10(31) |

Based on the available data the problem appears to be for the wet weather conditions. All of the data for the Verdugo Wash show no exceedances for the dry weather flow. That would indicate that the existing BMPs are effective in dealing with the metals generated within the Watershed during dry weather conditions.

The City will be required to evaluate the wet weather conditions and implement BMPs for Reach 3 that provide for source control or regional treatment for metals that are washed off streets into the storm drain system during storm events. This will be further discussed later in this document.

Best Management Practices

There are several available BMP types that can reduce metals loading in the watershed. Generally, they are defined here as either non-structural or structural BMPs.

Non-structural BMPs

Non-structural BMPs can provide cost effective water quality benefits by reducing or eliminating pollutants at their source. Effective implementation of these BMPs reduces the need for more costly structural BMPs. Non-structural BMPs include Public Education and outreach programs to change behavior, development policies that reduce impervious areas, ordinances that conserve water and minimize source of dry weather flows, and product replacement efforts that eliminate sources of pollutants in the environment.

Non-structural BMPs are typically implemented at the Municipal level of Government, but may also be implemented statewide, where sufficient interest exists to regulate products identified as significant pollutant sources. For example, product replacement efforts are typically most successful when applied statewide (or even nationwide) rather than locally. A prime example of this type of BMP is the work of the Brake Pad Partnership that is attempting to remove copper from brake pads. This single change can eliminate copper in all forms (dissolved and total) which would not cost the City anything more than its cost to support the needed legislation. When compared to the cost that would likely be required to design, construct and maintain an infiltration facility of sufficient size to remove copper from the wet weather runoff it should be evident that this non-structural BMP is very cost effective.

The Benefits of a comprehensive, effective non-structural BMP program include:

- Flexibility – The level of effort applied to program elements may be increased or decreased based on the need. For example, if a particular program is found to be especially beneficial, resources may be increased to enhance the program.

- Cost Effective – Structural BMPs are not only costly to build, but have continuing operational and maintenance (O & M) costs associated with them. In contrast, non-structural BMPs often have minimal capital cost and O&M associated with them. Because the programs may be applied to large areas to reach large numbers of people at the same time, these programs can be very cost effective in terms of water quality benefits.
- Urban retrofit potential – Much of the Reach 3 watershed is highly urbanized. The potential to retrofit infrastructure to capture and treat urban runoff is somewhat limited unless extremely costly land use conversion activities are implemented. Accordingly, the use of effective non-structural BMPs provides a much less costly approach to reducing pollutants in urban runoff.
- Target specific sources – Non-structural programs can often be designed to target not only specific pollutant sources, but also target areas where pollutant loads are known to be particularly high.

Structural BMPs

Structural BMPs are engineered systems that can provide benefits for both water quantity and quality. The purpose is to provide water quality benefits to the watershed by removing metals from urban runoff through structural BMP implementation. To implement the most effective structural BMP on a site, many factors about the BMP itself should be evaluated including construction and maintenance costs as well as overall effectiveness. The highest ranked Structural BMP based on cost and effectiveness should be given the highest priority for implementation.

Structural BMPs considered for the City of La Canada Flintridge Reach 3 watershed were classified as having a regional, neighborhood, or lot level application. A regional or neighborhood BMP application is capable of accepting drainage from larger areas, typically spanning multiple land uses as well as owners. Lot Level BMPs are better suited for accepting smaller drainage areas and are more appropriate for treating Stormwater runoff from individual parcels of land. All structural BMPs evaluated as part of this plan are effective in removing metals from storm water runoff.

Common categories of Regional, neighborhood, and lot level structural BMPs considered for implementation include:

- Infiltration systems. Infiltration systems are constructed to infiltrate a calculated volume of water into the ground. Examples of infiltration systems include Infiltration trench, infiltration basin and porous pavement.
- Detention Systems. Detention systems are designed to temporarily detain a volume of water, allowing solids to settle out, before release to

a downstream system. A detention system can be designed with a permanent pool (wet detention), where storage is provided above a defined permanent pool elevation.

- **Constructed Wetland Systems.** A constructed wetland is similar to a detention system, with the general exception of a shallower footprint that retains water to support wetland vegetation growth. Examples of constructed wetland systems include subsurface wetlands with detention and constructed wetlands/wet ponds.
- **Filtration systems.** Filtration systems consist of a granular filtration media or separation process that removes constituents found in Stormwater runoff. Examples of these systems include catch basin inserts, media filters, gross solids removal devices, and hydrodynamic devices. These are typically manufactured devices.
- **Biofiltration and vegetated systems.** Biofiltration and vegetated systems are designed to utilize vegetation to accept and treat Stormwater runoff through infiltration into layers of plant roots and the growing medium. These systems can be simple as a filter strip, a swale, a rain garden, or as complex as a bioretention cell.

Implementation Plan

The City of La Canada Flintridge for the Reach 3 portion of the LAR watershed intends to utilize a Metals Implementation Plan including three key areas. Because the dry weather data indicates that metals are not currently a problem, the City intends to continue monitoring the dry weather flow in Verdugo wash to control the level of implementation of BMPs for that purpose. To address the issue of wet weather flows the City of La Canada Flintridge proposes to focus on the following three BMPs:

- **New Development and significant redevelopment – Water Quality** benefits to be obtained through ongoing implementation of new development and significant redevelopment projects. The City has a unique condition that will allow the installation of lot level infiltration systems during the application process for New Development and Significant redevelopment. The City will adopt the necessary implementing Ordinance to require that each new project as well as all significant redevelopment projects will install infiltration systems to infiltrate runoff equal to the ten year storm runoff caused by project. The development of this Ordinance to require Infiltration for all new developments and significant redevelopment projects will take up to one year from the date the implementation plan is approved by the Regional Board. The City will complete the review and adoption process by March 2012.
- **Non-structural BMPs –** This area will include support for legislation that removes metals from the environment. State Senate Bill Number 346 of the 2010 legislative session was signed by the Governor to remove

Copper from brake Pads. The City will also participate in any effort to obtain a legislative sponsor that will present statewide legislation to remove zinc from tires or lead weights from tire balancing, which are the primary source of zinc and lead in the environment. While this is an important issue it will be driven by the legislative process.

- Structural BMPs –The City of La Canada Flintridge, while a small portion of the Reach 3 watershed, will evaluate and support Structural BMPs that can be shown to be Cost Effective and can be implemented with a general consensus of the City of Los Angeles, Burbank, Glendale, County of Los Angeles for the Reach 3 Watershed. The Structural BMP implementation will be difficult to schedule because the major players in the Watershed appear to be going separate ways on this issue. La Canada Flintridge is a small player in Reach 3 and because we are at the headwaters of the watershed the installation of a Regional BMP within the City limits of La Canada Flintridge is not likely. The City will proportionally participate with our neighbors, the City of Glendale, City of Burbank, City of Los Angeles and the County of Los Angeles when the Regional Board approved regional project is identified that we drain to.

Schedule

- The Regional Board has asked that the Implementation plan contain a schedule with milestones for use as a check for compliance. The adopted TMDL contains the primary Milestones:
 - January 11, 2012 the City must show that it has implemented BMPs within percentages of its area to provide required protection to limit the introduction of metals from 50% for dry weather and 25% for wet weather.
 - January 11, 2020 the City must show that it has implemented BMPs within percentages of its area to provide required protection to limit the introduction of metals from 75% for dry weather.
 - January 11, 2024 the City must show that it has implemented BMPs within percentages of its area to provide required protection to limit the introduction of metals from 100% for dry weather and 50% for wet weather.
 - January 11, 2028 the City must show that it has implemented BMPs within percentages of its area to provide required protection to limit the introduction of metals from 100% for dry weather and wet weather.

The monitoring data that has been submitted to the Regional Board from the Consolidated Monitoring Program shows that the Verdugo Wash does not show

exceedances for either dry or wet weather flows. The City of La Canada Flintridge believes that this data provides adequate evidence that the BMPs that are in place, which include street sweeping, individual project infiltration and property maintenance efforts, are meeting the requirements at this time. The City of La Canada Flintridge commits to the ongoing review of the Consolidated Monitoring Date, on an annual basis, to assure that the Verdugo Wash continues to comply with the metals TMDL limits.

The Regional Board has asked the City to estimate the reduction required to attain the WLA imposed by the TMDL. As noted above the City believes that the BMPs that are in place at this time provide compliance, therefore the commitment to require the installation of individual lot infiltration systems will continue to reduce the loads that are present. Infiltration for the ten year storm will capture the first flush thus removing the vast majority of the metals load. This will be accomplished during the first storm of the season as well as each of the following storms.

Finally the Regional Board asks the City to include a review of the existing effectiveness monitoring program under the CMP and determine if any modifications are necessary. The City of La Canada Flintridge thanks the Regional Board for the compliment that this request conveys. However the City of La Canada Flintridge does not have the expertise to accomplish the requested review in a meaningful way. The City of La Canada Flintridge will defer to the expertise held by the City of Los Angeles and the County of Los Angeles and assume that if they will identify any deficiencies in the effectiveness monitoring that they will present those recommendations to the Regional Board.